5(4) SOV/69-21-4-2/22

AUTHOR: Belyayeva, I.I. and Smirnov, N.S.

TITLE: Precipitation of Artificial Fogs

PERIODICAL: Kolloidnyy zhurnal, 1959, Vol XXI, Nr 4, pp 385-387 (USSR)

ABSTRACT: The authors report on the results of an investigation of the precipitation of artificial fogs. The article continues former publications of the authors (references 1 and 2), in which they describe the formation of these fogs by means of treatment of common air (relative humidity not exceeding 100%) with ionizing rays. The precipitation was carried out with the aid of α and β particles and γ-quanta Co 60. For the first series of experiements, the authors used the device described in figure 2. For the second and third series, cylindrical glass vessels (volume=4.4 l) were used. With the introduction of a radioactive source, fog development could be observed. Fog droplets precipitated on small thin glass plates. The precipitation was microphotographed (Figure 1). Photographs 1-6 show that precipitation formed as a result

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Precipitation of Artificial Fogs

of treatment with α and β particles, become more strongly dispersed in dependence on the duration of the treatment. Photographs 7-10 (treatment with γ-quanta Co 60) show that the dispersion of the precipitation depends on the intensity of ray treatment. The higher the intensity the greater the number of droplets and their size. In order to investigate the precipitation process also with regard to time, the authors developed a quartz microbalance suitable for this purpose. The balance was put into a cylindrical glass vessel (volume= 4.4 l). The measurements were carried out with a horizontally installed microscope. Prior to the introduction of a radioactive source (α-particles) no deformation of the quartz thread with the plate for the precipitate could be observed. After introduction of the source fog formed and precipitated on the plate. The results of the experiments are illustrated by a graph (Figure 4). Curve I shows that the fog precipitates continuously during the ray treatment of the air. For the sake

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Precipitation of Artificial Fogs

of comparison, curve 2 shows the precipitation of red phosphorus. The phosphorus was burnt in a small electric furnace, which had been substituted to the radioactive source. On the whole, the experiments have shown that the treatment of common moist air with ionizing rays increases the number and size of the particles of its disperse phase. As a result of this the formation of fog can be observed. Fog formation and precipitation during ray treatment continue without interruption and with constant speed. The quantity of precipitated fog and its dispersion are dependent on the intensity and duration of ray treatment. There is 1 set of photographs, 2 diagrams, 1 graph and 3 Soviet references.

ASSOCIATION: Institut goryuchikh iskopayemykh AN SSSR, Moskva
(Institute of Mineral Fuels of the AS USSR, Moscow)

SUBMITTED: 5 February, 1958.

ACCESSION NR: AP4024996 S/0070/64/009/002/0280/0281

AUTHORS: Belyayev, I. N.; Aver'yanova, L. N.; Belyayeva, I. I.

TITLE: New compounds with the structure of pyrochlore

SOURCE: Kristallografiya, v. 9, no. 2, 1964, 280-281

TOPIC TAGS: pyrochlore, lead, cadmium, titanium, zirconium, tin, tungsten, solid phase, cubic structure, defect, oxygen, x ray characteristic

ABSTRACT: The authors have presented data on new compounds having the general formula $A_2(B_{2-x}B'_x)O_{6+x}$, where A represents ions of Pb and Cd; B ions of Ti, Zr, and Sn; and B' the hexavalent ion of W. These compounds were synthesized by solid-phase reactions. The x-ray characteristics of hkl lines are shown in Table 1 on the Enclosures. From these it may be seen that all the synthesized compounds have the cubic structure of pyrochlore with defects about oxygen. The authors point out that attempts to replace the W ion by Mo and the Pb or Cd ion by other bivalent metals have not yet been successful. Orig. art. has: 2 tables.

Card 1/2

ACCESSION NR: AP4024996

ASSOCIATION: Rostovskiy-na-Donu gosudarstvenny*y universitet (Rostov-on-Don State University)

SUBMITTED: 26Jun63	DATE ACQ: 16Apr64	ENCL: 02
SUB CODE: PH	NO REF SOV: 002	OTHER: 003

Card 2/2

BELYAYEV, I.N.; AVER'YANOVA, L.N.; BELYAYEVA, I.I.

X-ray and dilatometric studies of the systems $PbZrO_3$ - $PbWO_4(MoO_4)$. Izv. AN SSSR. Neorg. mat. 1 no.3:392-394 Mr '65.
(MIRA 18:6)

1. Rostovskiy gosudarstvennyy universitet.

L 2287-66 EWP(e)/EWT(m)/T/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWA(c) IJP(c) JD/JG

ACCESSION NR: AP5022273 UR/0363/65/001/007/1184/1188
541.123.2

AUTHOR: Belyayev, I. N.; Aver'yanova, L. N.; Belyayeva, I. I.

TITLE: X-ray phase study of the systems "$PbSnO_3$" - $PbWO_4$, "$PbSnO_3$" - $PbMoO_4$, $PbHfO_3$ - $PbWO_4$, and $PbHfO_3$ - $PbMoO_4$.

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 7, 1965, 1184-1188.

TOPIC TAGS: lead compound, tin compound, tungsten compound, molybdenum compound, hafnium compound, ferroelectric material

ABSTRACT: The paper continues a study of the nature of solid-state reactions in systems involving ferroelectrics and antiferroelectrics. The pressed and sintered samples were analyzed by X-ray powder techniques. It was found that in the "$PbSnO_3$" - $PbWO_4$ system (where "$PbSnO_3$" is a mixture of 50 mole % PbO and 50 mole % SnO_2), the compound $3PbSnO_3 \cdot PbWO_4$ is formed at 700-900C. At 900C, the compound begins to decompose into the original components. In the $PbHfO_3$ - $PbWO_4$ system, if the pressing preceding the sintering is carried out under a pressure of no less than 100 kg/cm^2 and the firing temperature is 800-1000C, the compound

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L 2287-66

ACCESSION NR: AP5022273

2

$2PbHfO_3 \cdot PbWO_4$ is formed. The compounds observed have pyrochlore-type crystal lattices, and the unit cells are expressed by the formulas $Pb_2(Sn_{1.5}W_{0.5})O_{6.5}$ and $Pb_2(Hf_{1.33}W_{0.66})O_{6.6}$ with constant a equal to 10.52 and 10.66 A, respectively. In the "$PbSnO_3$" - $PbMoO_4$ system at 600-900C and compacting pressure (preceding the firing) of 50 kg/cm^2 and in the $PbHgO_3$ - $PbMoO_4$ system at 800C and a compacting pressure of 100 kg/cm^2, no chemical reactions are observed. Orig. art. has: 1 figure and 3 tables.

ASSOCIATION: Rostovskiy-na-Donu gosudarstvennyy universitet (Rostov-on-Don State University)

SUBMITTED: 24Mar65 ENCL: 00 SUB CODE: IC, GC

NO REF SOV: 009 OTHER: 003

Card 2/2 DP

L [illegible] EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6025698 SOURCE CODE: UR/0078/66/011/005/1183/1188

AUTHOR: Belyayev, I. N.; Aver'yanova, L. N.; Belyayeva, I. I.

ORG: none

TITLE: Solid-phase reactions of divalent metal titanates

SOURCE: Zhurnal neorganicheskoy khimii, v. 11, no. 5, 1966, 1183-1188

TOPIC TAGS: titanate, sulfate, phosphate

ABSTRACT: X-ray diffraction analysis was used to study the solid-phase reactions in the systems $MeTiO_3$-$PbSO_4$ and $MeTiO_3$-$Pb_3(PO_4)_2$, constituting diagonal sections of the ternary reciprocal systems $Me,Pb \parallel TiO_3,SO_4(PO_4)$, where Me = Mg, Ca, Sr, Ba, Zn, Cd, in the 600-1000°C range. It was found that in these ternary systems, where Me = Ca, Sr, Ba, and also in the $Mg,Pb \parallel TiO_3,PO_4$ system at 700-1000°C, in the course of 20 hr, a substantial displacement of the equilibria $MeTiO_3 + PbSO_4(PO_4) \rightleftharpoons PbTiO_3 + MeSO_4(PO_4)$ takes place to the right, i. e., to the side of a pair of salts in which a cation with an 18+2 electron shell (Pb) combines with an anion containing an atom with an unfilled d subshell (Ti). Thus, all the indicated reactions are irreversible and reciprocal with stable salt pairs $PbTiO_3 + MeSO_4(PO_4)$. Because of the presence of the exchange product (lead titanate) and original titanate ($MeTiO_3$) in the calcined samples, the systems $Zn,Pb \parallel TiO_3,SO_4$, $Cd,Pb \parallel TiO_3$, and also $Mg,Pb \parallel TiO_3,SO_4$ are irreversible and reciprocal. The appearance of the exchange product in them coincides with the appear-

Card 1/2 UDC: 546.824:541.124-16

L 45720-66
ACC NR: AP6025698

ance of the liquid phase, indicating that the reactions in these systems cannot be classified as solid-phase reactions. It was found that the equilibrium in the system $3ZnTiO_3 + Pb_3(PO_4)_2 \rightleftarrows 3PbTiO_3 + Zn_3(PO_4)_2$ at low temperatures is displaced toward the formation of zinc titanate and lead phosphate, and at 800°C to the side of lead titanate and zinc phosphate. Orig. art. has: 4 figures and 2 tables.

SUB CODE: 07/ SUBM DATE: 30Jul65/ ORIG REF: 003/ OTH REF: 001

Card 2/2 ULR

AUTHORS: Yakubovich, A. Ya., Razumovskiy, V. V., Belyayeva, I. N. 79-28-3-25/61

TITLE: The Synthesis of Vinyl Monomers (Sintezy vinilovykh monomerov).
III. Note on the Synthesis of Compounds With a Carbonyl Group (III. Zamechaniye k sintezu soyedineniy s karbonil'noy gruppoy)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 3, pp. 680-682 (USSR)

ABSTRACT: There are hints that in certain cases an easy course of the Mannichs reaction depends on the nature of the used base. Thus Levy and Nisbet (ref. 1) noted that 2-acetylfurfuran and formaldehyde enter into reactions with salts of dimethylamine and dipropylamine but never with a salt of diethylamine. Mannich and Heilner (ref. 2) described the synthesis of the phenylvinylketone when using the hydrochloride of dimethylamine. Joung and Roberts obtained the same ketone with the hydrochlorine of diethylamine. The authors synthetized the phenylvinylketone with the same salts; they found however,

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The Synthesis of Vinyl Monomers. 79-28-3-25/61
III. Note on the Synthesis of Compounds With a Carbonyl Group

that the reaction with the hydrochlorine of diethylamine takes place considerably slower and that the yield of the hydrochlorine of dialkylaminopropriophenon is smaller than with the use of the hydrochlorine of dimethylamine (63 to 75,5 % correspondingly). Phenylisopropyleneketone was synthetized from the hydrochlorine of dimethylamino-methylpropriophenon. It turned out that propriophenon and paraformaldehyde do not react with the hydrochlorine of diethylamine. According to Mannich also the 2,5-dichloro-phenylketone was synthetized anew. The 2,5-dichloroacetophenon and its paraform react only little with the hydrochlorine of diethylamine; easier, however, with that of dimethylamine. The ketone obtained here easily polymerizes in the distillation, even in vacuo and in the presence of an inhibitor. In publications referring to the most simple unsaturated aldehydes, the acroleine and methacroleine, only patent data are known on the synthesis of the oximes of these aldehydes. The authors synthetized in a new way the oxime of macroleine by reaction of the meta-macroleine with hydroxylamine (yield 65 %).

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The Synthesis of Vinyl Monomers. 79-28-3-25/61
III. Note on the Synthesis of Compounds With a Carbonyl Group.

There are 12 references, 4 of which are Soviet

SUBMITTED: January 24, 1957

Card 3/3

BELYAYEVA, I. N.

82678

S/079/60/030/008/001/008
B004/B064

5.3831

AUTHORS: Yakubovich, A. Ya., Bogoslovskiy, N. A., Pravova, Ye. P., Belyayeva, I. N., Razumovskiy, V. V.

TITLE: Synthesis of Vinyl Monomers. 11. The Synthesis of α-Chlorohydroacrylates and α-Chloroacrylates

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 8, pp. 2496 - 2498

TEXT: The authors report on the following syntheses: α-chloro-β-hydroxy propionitrile (I) from aqueous solution of acrylonitrile by introduction of chlorine gas at 16°C. The compound was extracted with ether. Yield: 38.5%. α-chloro-β-acetoxy propionitrile (2) from I by heating with acetic anhydride and sodium acetate over the water bath (yield 55.8%). Methyl-α-chloro-β-hydroxy propionate (3) by chlorinating methyl acrylate (yield 23.5%). Methyl-α-chloroacrylate (4) a) by dropping 3 into a mixture of H_2SO_4 and Cu_2Cl_2 (yield 74%) heated to 125-130°C; b) by dropping 3 into a mixture of P_2O_5 and Cu_2Cl_2 (yield 64%). α-chloroacrylonitrile (5)

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82678

Synthesis of Vinyl Monomers. 11. The Synthesis of α-Chlorohydroacrylates and α-Chloroacrylates S/079/60/030/008/001/008 B004/B064

by heating I with sodium bisulfate. Phenyl-α-chloroacrylate (6) by addition of triethyl amine solved in benzene to phenyl-α,β-dichloropropionate solved in benzene, filtering off of the triethyl amine hydrochloride precipitate, distilling off of benzene and the excessive triethylamine, fractionating the residue in the presence of phenyl-β-naphthyl-amine (yield 49%). In 6 the authors found the refractive index n_D^{20} to be 1.5325. They consider this value to be more correct than that of 1.5808 given in Ref. 3. There are 4 non-Soviet references.

SUBMITTED: July 31, 1959

Card 2/2

YAKUBOVICH, A.Ya.; BELYAYEVA, I.N.

Methylolhalomalonates. Zhur.ob.khim. 31 no.7:2119-2122 Jl '61.
(MIRA 14:7)
(Malonic acid)

S/169/62/000/001/041/083
D228/D302

AUTHOR: Belyayeva, I. P.

TITLE: Flows of reflected and scattered radiation on slopes

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 1, 1962, 15, abstract 1B120 (Tr. Gl. geofiz. observ., no. 107,1961, 105-111)

TEXT: The results of measuring reflected and scattered radiation upon slopes on clear days in September 1959 in the vicinity of the Golodnaya Steppe are considered; these were carried out by means of a thermoelectric pyranometer, fastened to a theodolite, with a screen and special apparatus for shading the reception part from the influence of radiation reflected by a horizontal surface (a ring). The device slopes at different angles to the horizon and is oriented according to four main bearings with the aim of ascertaining the patterns of slope irradiation. It is noted that on clear days direct and scattered radiation plays a leading role in the incidence of short-wave radiation upon a slope. Scattered ra-

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diation, incident during the day on eastern and western slopes, does not depend on slope steepness (when the steepness does not exceed 40°). It is established that the magnitude of reflected radiation entering upon slopes with little steepness may be disregarded when the ground has a reflecting capacity of up to 34%. In the case of steeper slopes (more than 20°) isotropically approximated formulas are proposed for calculating the daily radiation totals. [Abstractor's note: Complete translation.]

Card 2/2

YAKUBOVICH, A.Ya.; SERGEYEV, A.P.; MELYAYEVA, I.N.

Direct fluorovinylation. Dokl. AN SSSR 161 no.6:1362-1364 Ap '65.
(MIRA 18:5)

1. Submitted October 26, 1964.

BELYAYEVA, I.P.

Annual movement of total radiation fluxes on an inclined plane. Izv. AN Uz. SSR. Ser. fiz.-mat.nauk no.5:38-45 '61. (MIRA 14:10)

1. Sredneaziatskiy gidrometeorologicheskiy institut.
(Uzbekistan--Solar radiation)

BELYAYEVA, I.P.

Results of measurements of the albedo of a mountainous region from a helicopter. Trudy Sred.-Az.nauch.-issl. gidrometeor. inst. no.18:48-55 '64. (MIRA 17:10)

S/166/62/000/004/005/010
B112/B186

3.5150

AUTHOR: Belyayeva, I. P.

TITLE: Calculation of the daily totals of accumulated (meteor-term) radiation striking inclined surfaces on cloudy days

PERIODICAL: Akademiya nauk Uzbekskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, no. 4, 1962, 38 - 46

TEXT: The effect of cloudiness on the relative daily totals $\Sigma Q_{acc\text{-}incl}/\Sigma Q_{acc\text{-}h}$ where the subscripts denote "inclined" and "horizontal" respectively is especially marked in winter, spring, and fall, because these are the seasons of maximum difference between the incidence of radiation on inclined and on horizontal surfaces. The relative daily totals depend not only on the quantity but also on the shapes of the clouds which have prevailed during the day. The effect of low clouds is especially strong when more than half the sky is covered with clouds. The daily total of radiation accumulated on an inclined surface during cloudy day can be calculated from the formula $\Sigma Q_{acc\text{-}incl} = \Sigma Q_{acc\text{-}h}(c \pm as)$. Here

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Calculation of the daily totals...

s is the duration of sunshine in hrs according to the heliograph; a and c are the coefficients represented by the expressions

$$c = \cos^2(a/2) + \sin^2(a/2)(\Sigma R_h/\Sigma D_h) \qquad (4)$$

and $$a = \pm((\Sigma Q_{acc\text{-}incl}/\Sigma Q_{acc\text{-}h})_{clear} - c)/s'_{poss} \qquad (5)$$

$(\Sigma R_h/\Sigma D_h)$ is the albedo of the active surface on a cloudy day, $(\Sigma Q_{acc\text{-}incl}/\Sigma Q_{acc\text{-}h})_{clear}$ is the relative daily total of accumulated radiation on an inclined surface in the course of a clear day, s'_{poss} is the possible duration of sunshine during the day). The daily total of radiation accumulated on an inclined surface during a cloudy day can be calculated from the formula $Q_{acc\text{-}incl} = Q_{acc\text{-}h}(c \pm as)$, where s is the duration of solar irradiation in hrs according to the heliograph whilst a and c are coefficients computed by (4) and (5). There are 2 figures and 6 tables.

ASSOCIATION: Sredneaziatskiy n.-i. gidrometeorologicheskiy institut (Central Asian Hydrometeorological Scientific Research Institute)

Card 2/3

S/166/62/000/004/005/010
B112/B186

Calculation of the daily totals...

SUBMITTED: April 18, 1962

4

Card 3/3

BELYAYEVA, I.P.

Temperature conditions of a cotton field. Trudy Sred.-Az. nauch.-issl. gidrometeor. inst. no.11:146-151 '69. (MIRA 16:11)

BELYAYEVA, I.P.

Determining soil surface temperature under the cotton plants.
Trudy Sred.-Az.nauch.-issl. gidrometeor. inst. no.16:80-84 '63.
(MIRA 17:6)

BELYAYEVA, I.P.

Calculation of tangential wind stress in different thermic stratification. Okeanologiia 5 no.2:206-209 '65.
(MIRA 18:6)

1. Leningradskiy gidrometeorologicheskiy institut.

L 00996-65 EWT(1)/EWG(v)/FCC Pe-5/Pi-4 GW

ACCESSION NR: AP5018703 UR/0050/65/000/008/0007/0012

630.551.521

AUTHORS: Belyayeva, I. P.; Rashkulik, V. I.; Sitnikova, M. V.

TITLE: The connection between the coefficient of brightness in a soil-vegetation system and the amount of vegetation

SOURCE: Meteorologiya i gidrologiya, no. 8, 1965, 7-12

TOPIC TAGS: brightness, soil, photometry, reflected radiation

ABSTRACT: An attempt has been made to discover the relationship between the coefficient of brightness in a soil-vegetation system and the amount of vegetation, considering the optical properties of the components of the system. The coefficient of brightness was measured by means of a tubular photometer with a view angle of 35°. Measurements were made normal to the surface, and sand, spread in an even layer on plywood, was used as a standard. The procedure involved measurement of the brightness of the standard, then the brightness of a selected segment of soil-vegetation, and then the standard again, repeated 3-4 times. The plant mass was then removed and weighed accurately (accuracy of ± 0.1 g). Types of vegetation included desert plants, pasture plants, wheat, and cotton (in both

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green and leafless states). It was found that the coefficient of brightness depends on amount of green material. In the soil-grass system, the coefficient of brightness depends little on the height of the sun from 20 to 60°. When the amount of green material is slight (up to 2000-2500 kg/hectare), the coefficient of brightness changes almost linearly with increase in green material. With further increase in green material the linear relation is disturbed, and, beginning at 5500-6000 kg/hectare, the coefficient remains practically constant for all amounts. For raw cotton, the coefficient increases linearly with increase in cotton from 400 to 3600 kg/hectare. The coefficient is not affected by the amount of cotton for amounts less than 400 kg/hectare. When the difference in reflecting properties between soil and the particular vegetation is rather large, the connection between coefficient of brightness and amount of vegetation may be satisfactorily expressed by

$$\bar{R}(m, p) = \frac{R(\infty)\,|R(\infty)\,R(0) - 1| + |R(\infty) - R(0)|\,e^{-\alpha p m}}{|R(\infty)\,R(0) - 1| + R(\infty)\,|R(\infty) - R(0)|\,e^{-\alpha p m}},$$

where m is the amount of vegetation per unit area, R(0) is the reflectance of the soil, R(∞) is the reflectance of the plant cover, α is a constant characterizing

L 60996-65
ACCESSION NR: AP5018703

the particular kind of vegetation, and

$$E = \frac{1 - R^2(\infty)}{R(\infty)}$$

Orig. art. has: 3 figures, 4 tables, and 2 equations.

ASSOCIATION: Sredneaziatskiy nauchno-issledovatel'skiy gidrometeorologicheskiy institut (Central Asian Scientific Research Hydrometeorological Institute)

SUBMITTED: 09Apr65 ENCL: 00 SUB CODE:

NO REF SOV: 010 OTHER: 000

Card 3/3

S/115/62/000/011/005/008
E194/E155

AUTHORS: Pak, Vanbo, Krinskiy, Yu.P., and Belyayeva, I.S.

TITLE: A simplified equipment for calibrating noble metal thermocouples under dynamic conditions

PERIODICAL: Izmeritel'naya tekhnika, no.11, 1962, 27-30

TEXT: The НГИМИП (NGIMIP) has developed a simple and reliable equipment for calibrating thermocouples under dynamic conditions. It uses a normal single-coordinate recording potentiometer; the thermocouples are connected by a standard selector switch, and a low-inertia 2 kW furnace is used. It is possible to measure the difference not only between the thermocouples under test and the reference thermocouple, but also the difference of e.m.f. between electrodes of the same material, and from these results the e.m.f. between platinum and platinum/rhodium thermocouples may be calculated. A schematic diagram of the equipment is given and the principles of operation are fully described. The only non-standard part of the equipment is a changeover switch vibrating at a frequency of 80 c/s and switching two capacitors in the circuit of the thermocouple under test. If a six-position recording

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potentiometer is used, four couples can be checked at once, the other two positions being used to record the output of the reference couple and a zero signal. Recordings are made every 5 seconds, the next couple being connected 1 second after the recording is made; thus four seconds elapse before the next reading, which is sufficient to establish equilibrium. The furnace is supplied through a motorised autotransformer which covers the voltage range in half an hour. It is best to calibrate whilst the furnace is cooling, and so the voltage is reduced from maximum to zero over a period of 30 minutes during which time the temperature falls to about 600-700 °C. With direct measurement of the difference in e.m.f. it is recommended to calibrate no more than four thermocouples at once or no more than two thermocouples if comparison is made by electrodes. The maximum error of calibration of a platinum-rhodium-platinum thermocouple on the equipment is ± 5 microvolts in the range 300-1200 °C. The method of working out the records is explained.
There are 3 figures.

BELYAYEVA, I.V.

Nematode fauna of principal soil types in the Kara-Kalpak A.S.S.R.
Trudy Gel'm. lab. 9:49 '59. (MIRA 13:3)
(Kara-Kulpak--Nematoda) (Soil fauna)

L 42885-66 EWT(m)/EWP(j) RM

ACC NR: AP6020387 (A) SOURCE CODE: UR/0192/66/007/001/0130/0131

AUTHOR: Belyayeva, K. F.; Poray-Koshits, M. A.; Mitrofanova, N. D.; Martynenko, L. I.

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

51
B

TITLE: X-ray structural study of neodymium nitrilotriacetate trihydrate

SOURCE: Zhurnal strukturnoy khimii, v. 7, no. 1, 1966, 130-131

TOPIC TAGS: neodymium compound, nitrogen compound, acetate, crystal structure analysis, electron density, x ray analysis

ABSTRACT: Data are presented on the lattice parameters of $GdX \cdot 4H_2O$ and $ErX \cdot 4H_2O$ (X = acid residue of nitriloacetic acid $(HOOCCH_2)_3N$), and preliminary data on the structure of one of the two modifications of $NdX \cdot 3H_2O$ (the so-called low-temperature modification, i. e., the trihydrate). $GdX \cdot 4H_2O$ crystals are colorless, well-faceted hexagonal pyramids. The Laue symmetry class is $6/mmm = D_{6h}$, the pycnometric density 2.31 g/cm^3, and the lattice parameters a = 10.3, c > 30 Å. $ErX \cdot 4H_2O$ crystals belong to the rhombic system and are in the form of very fine rhombic prisms. The lattice parameters a = 12.1, b = 21.5, c = 9.0 Å, d_{calc} = 2.40 g/cm^3. Space groups $Pna2_1$ and Pnam are possible, and N = 4. The pale-lilac, well-faceted $NdX \cdot 3H_2O$ crystals belong to the rhombic system: a = 13.21, b = 20.88, c = 8.12 Å, d_{meas} = 2.27, d_{calc} = 2.29 g/cm^3, N = 8. Space group P_{bca}. The atomic coordinates were determined from the

Card 1/2 UDC: 538.736.4

BELYAYEVA, K.G.

Diabetes and pregnancy. Akush. i gin. 34 no.6:6-11 N-D '58. (MIRA 12:1)

1. Iz otdela patologii beremennykh (zav. - dots. N.A. Panchenko) Ukrainskogo nauchno-issledovatel'skogo instituta klinicheskoy meditsiny imeni akad. N.D. Strazhesko.
(DIABETES MELLITUS, in pregn.
progn. (Rus))
(PREGNANCY, in various dis.
diabetes mellitus, progn. (Rus))

BELYAYEVA, K. I.

Belyayeva, K. I. -- "Ecological and Biological Characteristics of Large Sea Eels from the Lakes of the Karelo-Finnish SSR." Cand Biol Sci, Karelo-Finnish State U, 26 Jan 54. (Leninskeye Znamya, 17 Jan 54)

SO: SUM 168, 22 July 54

ALEKSANDROV, B.M., nauchnyy sotrudnik; ALEKSANDROVA, T.N., nauchnyy sotrudnik; BELYAYEVA, K.I., nauchnyy sotrudnik; GORBUNOVA, Z.A., nauchnyy sotrudnik; GORDEYEVA-PERTSEVA, L.I., nauchnyy sotrudnik; GORDEYEVA, L.N., nauchnyy sotrudnik; GULYAYEVA, A.M., nauchnyy sotrudnik; DMITRENKO, Yu.S., nauchnyy sotrudnik; ZABOLOTSKIY, A.A., nauchnyy sotrudnik; MAKAROVA, Ye.F., nauchnyy sotrudnik; NOVIKOV, P.I., nauchnyy sotrudnik; POKROVSKIY, V.V., nauchnyy sotrudnik; SMIRNOV, A.F., nauchnyy sotrudnik; STEFANOVSKAYA, A.F., nauchnyy sotrudnik; URBAN, V.V., nauchnyy sotrudnik. Prinimali uchastiye: BALAGUROVA, M.V., nauchnyy sotrudnik; VEBER, D.G., nauchnyy sotrudnik; POTAPOVA, O.I., nauchnyy sotrudnik; SOKOLOVA, V.A., nauchnyy sotrudnik; FILIMONOVA, Z.I., nauchnyy sotrudnik; POPENKO, L.K., nauchnyy sotrudnik; ZYTSAR', N.A., red.; PRAVDIN, I.F., red.; PANKRASHOV, A.P., red.; SHEVCHENKO, L.V., tekhn.red.

[Lakes of Karelia; natural features, fishes, and fisheries] Ozera Karelii; priroda, ryby i rybnoe khoziaistvo; spravochnik. Petrozavodsk, Gos.izd-vo Karel'skoi ASSR, 1959. 618 p. (MIRA 13:8)

(Continued on next card)

ALEKSANDROV, B.M. --- (continued) Card 2.

1. Russia (1917- R.S.F.S.R.) Karel'skiy ekonomicheskiy administrativnyy rayon. Sovet narodnogo khozyaystva. 2. Karel'skoye otdeleniye Vsesoyuznogo nauchno-issledovatel'skogo instituta ozernogo i rechnogo rybnogo khozyaystva (for Aleksandrov, Aleksandrova, Belyayeva, Gorbunova, Gordeyeva-Pertseva, Gordeyeva, Gulyayeva, Dmitrenko, Zabolotskiy, Makarova, Novikov, Pokrovskiy, Smirnov, Stefanovskaya, Urban). 3. Karel'skiy filial AN SSSR (for Balagurova, Veber, Potapova, Sokolova, Filimonova, Popenko).

(Karelia--Lakes)

BELYAYEVA, K.I.

Conference on problems of mechanizing and automatizing industrial processes. Tekst.prom. 18 no.12:66 D '58. (MIRA 11:12)
(Textile machinery)

BELYAYEVA, K.I.; GAYLIK, Ye.A.; ABRAMOV, S.A., dotsent

Efforts to improve the quality of production. Tekst. prom. 25 no.5:9-10 My '65. (MIRA 18:5)

1. Inspektor Inspektsii po kachestvu pri Leningradskom sovete narodnogo khozyaystva (for Belyayeva). 2. Starshiy inzh. Upravleniya legkoy promyshlennosti Litovskogo soveta narodnogo khozyaystva (for Gaylik). 3. Vsesoyuznyy zaochnyy institut tekstil'noy i legkoy promyshlennosti (for Abramov).

BELYAYEVA, K.M.

6

Unsaturated cyclic hydrocarbons and their halogen derivatives. XVIII. Synthesis and study of 1,4-dibromo-2-cyclohexene. N. A. Domnin, N. S. Shutova, and K. M. Belyaeva (State Univ., Leningrad). *Zhur. Obshchei Khim.* 25, 1933-6(1955); cf. C.A. 49, 11572h; 50, 1026c.—Dibromocyclohexene, m. 108-9°, formed by addn. of Br to 1,3-cyclohexadiene, is identical with the product formed from cyclohexene and *N*-bromosuccinimide. There are 3 apparently *isomorphous forms* of the *dibromocyclohexene*, m. 99-100°, 103-4°, and 108-9° (or 107-8°), resp. Purely chem. methods cannot be used to prove the structure of *1,4-dibromo-2-cyclohexene*. The substance cannot be hydrogenated over Raney Ni, while over Pd there takes place a replacement of 2 Br by 2 H. Electrolytic reduction on Cu electrode covered with Ni black failed to affect the compd. Oxidation with $KMnO_4$ or O_2 failed to give pos. results.

G. M. Kosolapoff

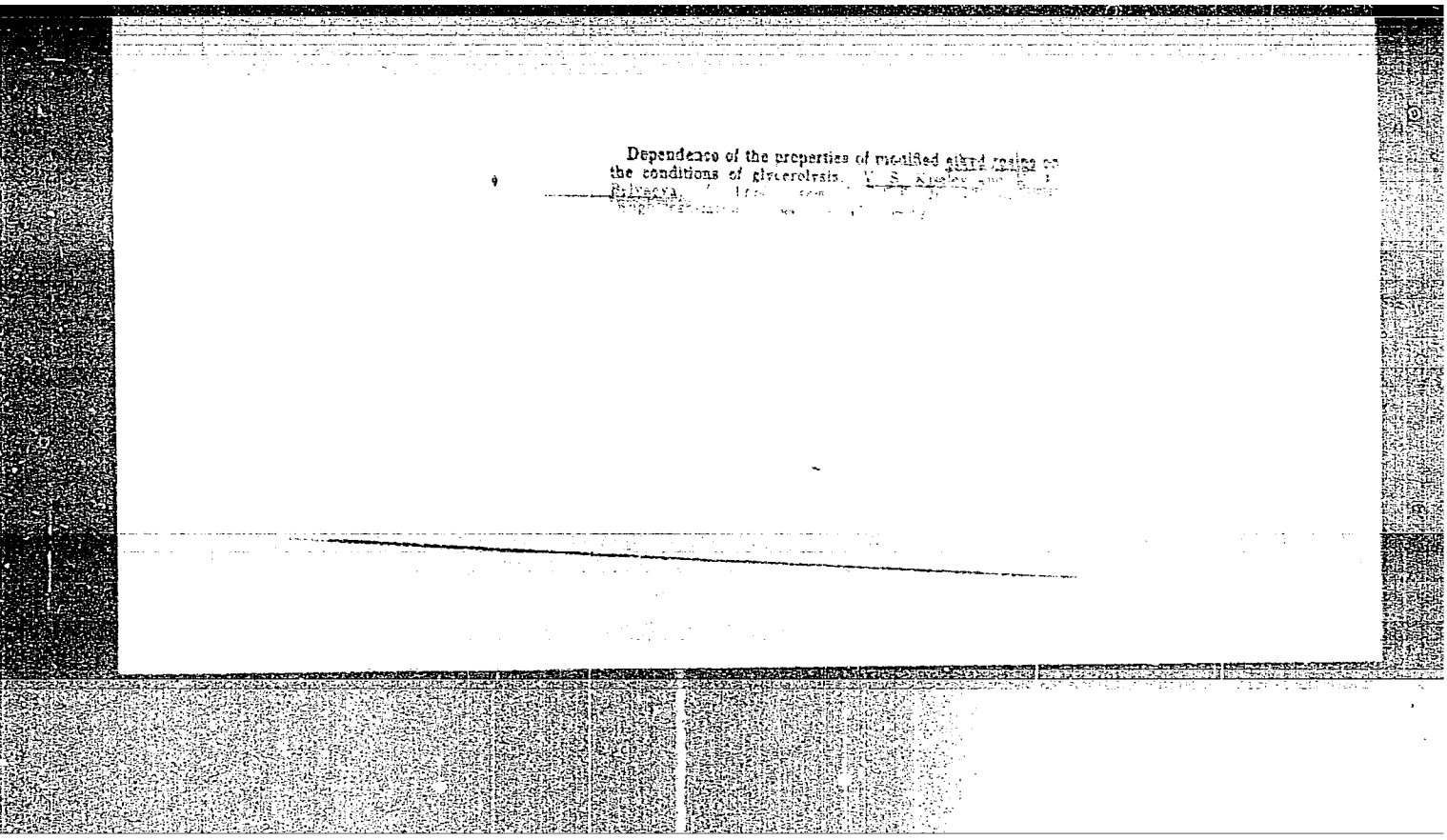
(2)

BELYAYEVA, K. P.

"Dependence of the Properties of Modified Glyptal Resins on the Conditions of Glycerolysis." Sub 28 Nov 51, Moscow Order of Lenin Chemicotechnological Inst imeni D. I. Mendeleyev.

Dissertations presented for science and engineering degrees in Moscow during 1951.

SO: Sum. No. 480, 9 May 55.



Dependence of the properties of modified starch esters on the conditions of glycerolysis.

KISELEV, V.S.; BELYAYEVA, K.P.

Dependence of the properties of modified alkyd resins on the conditions of glycerolysis. Zhur. Priklad. Khim. 26, 518-23 '53. (MLRA 6:5)
(CA 47 no.20:10866 '53)

USSR

Dependence of properties of modified alkyd resins on the conditions of glycerolysis. II. V. S. Kiselev and K. P. Belousova. *J. Appl. Chem. U.S.S.R.* 26, 1037–42(1953) (Engl. translation).—See *C.A.* 48, 1703e. H. L. H.

BELYAYEVA, K. P.

3

(2) Illegible

Chemical Abst.
Vol. 48 No. 3
Feb. 10, 1954
Paints, Varnishes, Lacquers, and Inks

Dependence of properties of modified alkyd resins on the conditions of glycerolysis. II. V. S. Kiselev and K. P. Belyaeva. *Zhur. Priklad. Khim.* 26, 1099-1102(1953); cf. 10300g.—The film-forming properties of modified glyptals obtained from mono- and dioleins by treatment at 150° with phthalic anhydride, followed by heating to 250°, were examd. Best films were obtained from monoölein and from mixed mono- and dioleins with free glycerol present. The presence of free glycerol in the initial formulation is thus quite beneficial. The glycerolysis reaction is best run up to the formation of 50% monoglycerides and the maintenance of excess glycerol at about 14% (1 mole); under such conditions, after the 250° treatment, the product is sol. in 95% EtOH to the extent of 1:10. A lower content of glycerol causes poorer film formation. The glycerolysis is best run in hermetically closed app. G. M. Kosolapoff

MV
9-9-54

5(2)

SOV/63-4-3-11/31

AUTHORS: Belyayeva, K.P., Candidate of Technical Sciences, Grozovskaya, A.M.

TITLE: Phosphating Primers

PERIODICAL: Khimicheskaya nauka i promyshlennost', 1959, Vol 4, Nr 3, pp 355-360 (USSR)

ABSTRACT: Parkerizing of metal surfaces before painting ensures a high corrosion resistance of the coating. The similarity of the crystal lattices of iron and the phosphate of iron protoxide is the base for the good adhesion [Ref 1]. Parkerizing by means of heated phosphoric salt solution is possible only in tanks and drying chambers. "Cold" parkerizing produces inferior protective coatings. Phosphating primers have been developed, therefore, which are applied together with the paint. They consist of a suspension of zinc tetraoxychromate in polyvinylbutyral and an acidic diluent which is an alcoholic solution of o-phosphoric acid. The primary alcohols reduce Cr^{6+} to Cr^{3+} which reacts with the free phosphoric acid forming a complex chromophosphate salt. The ratio H_3PO_4 : CrO_3 should be higher than 1.5 in order to obtain good adhesion. The optimum value is 2, the pH value of the primer is then 2.7 - 3. Pigments in the primer increase its water and corrosion

Card 1/2

resistance. Lead and strontium chromes [Ref 24, 25] are stable in the acidic diluent for 18 months so that no mixing of the components before application is needed. The protective properties of the primers have been investigated by GIPI-4 [Ref 29]. They depend on the dispersion of the zinc chrome and the thickness of the applied layer. The optimum thickness is 6 - 10 μ. The protective effect of a parkerizing layer is shown in Figures 1 - 5. In the USSR a two-component primer VL-08 consisting of a rolled paste of aqueous zinc chrome with polyvinylbutyral is being produced. It is mixed with an acid diluent at the ratio 4 : 1.

There are 5 sets of photos and 30 references, 8 of which are Soviet, 15 English, 5 German, 1 French and 1 Swiss.

BELYAYEVA, Klavdiya Pavlovna; USPENSKIY, I.A., red.; SHPAK, Ye.G., tekhn.red.

[Paint materials for finishing articles of wood] Lakokrasochnye materialy dlia otdelki izdelii iz dereva. Moskva, Gos.nauchno-tekhn.izd-vo khim.lit-ry, 1960. 73 p. (MIRA 13:7)

(Wood finishing) (Paint materials)

RASKIN, Ya.L.; ERMAN, V.Yu.; BELYAYEVA, K.P.; BERLIN, A.A.

Use of polyester acrylates as film-forming agents. Report No. 2: Film-forming capacities of polyester acrylates. Lakokras.mat i ikh prim. no.2:21-26 '61. (MIRA 14:4)
(Acrylic acid) (Films (Chemistry))

BELYAYEVA, K.P.; GROZOVSKAYA, A.M.; ALEKSEYEV, I.M.; PICHUGIN, S.M.;
Prinimali uchastiye: ASTAKHOVA, G.V.; TSAREVA, Ye.G.; KORZINA G.P.

VL-08 wash primer. Lakokras.mat.i ikh prim. no.3:23-25 '60.
(MIRA 14:4)

(Protective coatings) (Phosphoric acid)

BELYAYEVA, K.P.; RASKIN, Ya.L.; BERLIN, A.A.

Polyester acrylates as film-forming materials. Report No. 1: Polyester acrylates as film-forming materials in lacquers for wood finishing. Lakokras. mat. i ikh prim. no. 6:5-11 '60.
(MIRA 13:12)

(Acrylic acid) (Lacquers and lacquering)

BELYAYEVA, K.V., dotsent, kandidat biologicheskikh nauk.

Data on nematodes in alfalfa fields of Uzbekistan. Biul SAGU no.28:47-54 '49. (MLRA 9:5)
(Uzbekistan--Nematoda) (Alfalfa--Diseases and pests)

BELYAEVA, K. V.

RT-1530 (On the problem of distribution of nematodes in the soil, root and above-ground parts of plants) K voprosu o raspredelenii nematod v pochve kornevoi i nadzemnoi chastiakh rastenii.
TRUDY ZOOLOGICHESKOGO INSTITUTA AKADEMII NAUK SSSR 9(2): 613-624, 1951

BELYAYEVA, K.V.

Nematodes of the rubber-bearing plants tau-saghyz and krym-saghyz. Trudy SAGU no.32:97-107 '52. (MLRA 9:5)
(Soviet Central Asia--Nematoda) (Parasites--Rubber plants)

SOCHILOVA, A.A.; BUYANOVSKAYA, I.S.; KENINA, A.Ye.; DMITRIYEVA, V.S.; FURER, N.M.; BELYAYEVA, L.A.; KUVSHINOVA, Ye.V.; VAKULENKO, N.A.; ZAMUKHOVSKAYA, A.N.; LEONOVA, A.G.

Agar diffusion method for determining the activity of antibiotics. Trudy VNIIA no.1:10-26 '53. (MLRA 8:1)
(Antibiotics--Testing) (Bacteriology--Culture and culture media)

BELYAYEVA, L.A.

"The Antimicrobial Activity of Biomycin," by L. M. Yakobson, I. S. Buyanovskaya, L. A. Belyayeva, and Ye. V. Kubshinova, All-Union Scientific Research Institute of Antibiotics, Biomitsin (Biomycin), Medgiz, Moscow, 195[illegible], pp 7-15

This work discusses methods developed to determine the antimicrobial spectrum of biomycin. Activity of the drug was considered from two aspects: (1) the range of action was investigated to determine the antimicrobial activity of the drug, and; (2) conditions for standardizing commercial biomycin were established. The spectrum was explored according to the usual technique employed in studying drugs with unknown ranges of activity; this technique is described in detail in the text.

The activity of biomycin on anaerobic cultures was tested on a Tarozzi medium covered with a layer of vaseline. Results were calculated according to the completeness of the suppression of growth after the test cultures had been kept at 37° for 18-20 hours. Average data collected in numerous experiments are presented in a table, which shows the lowest concentration in units/ml which suppressed the growth of 35 microorganisms -- typhoid, paratyphoid, and dysentery bacilli, Vibrio cholera, Staphylocci, B. coli, B. anthracoides, B. mycoides, B. perfringens, and others.

Sum. 1360

BELYAYEVA, L.A.

It was found that gram-positive and gram-negative, spore-forming and non-spore-forming, obligate aerobic and anaerobic microorganisms were sensitive to very low concentrations of biomycin. The article notes high activity with respect to pathogens of dysentery, cholera, and gas gangrene. It states that these spectra cannot be used for strandardizing commercial preparations. The agar-diffusion method developed and tested for this purpose is described. Comparative sensitivity of several microorganisms to biomycin as determined by this method is presented in a table. The capacity of various buffer solutions to diffuse in agar was calculated according to the size of the area in which growth of test microorganisms was suppresed, and according to the clearness of this area. Average results of these experiments are shown in another table. A fourth gives results of experiments which established that a buffer solution containing phosphate (Na_2HPO_4 in a 0.2 M and 0.1 M solutions of citric acid) increases the diameter of the cleared area. Results of a number of experiments with various media in which the size and clearness of the area of suppression of growth of test microorganism L_2 was calculated are shown in a fifth table.

The work states that the agar-diffusion method described herein is used for standardizing commercial preparations, and instructions for control are designated.

Sum. 1360

BELYAYEVA, L. A.

Stability of the antimicrobial properties of biomycin was also investigated. In this way, the precision of the method developed was again verified.

The work mentions that the original method for determining the concentration of biomycin by total fluorescence (developed by Ye. N. Druzhinina in this laboratory) is based on the relation of the magnitude of the degree of activity of biomycin, determined by the agar-diffusion method, to the degree of intensity of the fluorescence of biomycin in the filtered ultraviolet light of a Bud lamp.

The following conclusions are presented on the basis of these experiments:

"1. Biomycin is a highly active antibiotic which has a wide antimicrobial spectrum. Its active concentration in the experiments described with respect to various disease pathogens fluctuates from 0.07 to 10 units/ml.

"2. Conditions for standardizing biomycin by the agar-diffusion method have been established. The lowest concentration determined by this method was one unit/ml." (U)

Sum. 1360

BELYAYEVA, L.A.

USSR/Microbiology - Antibiosis and Symbiosis. Antibiotics F-2

Abs Jour : Referat Zhurn - Biol. No 16, 25 Aug 1957, 68470

Author : Glazman, M.G., Belyaeva, L.A.
Title : The Study of Mycerin Activity in Experiments in Vitro.

Orig Pub : Antibiotiki, 1956, 1, No 5, 23-26

Abstract : Of 36 cultures of staphylococci isolated from patients, 35 were sensitive to mycerin, 10 to penicillin, 23 to streptomycin, 31 to biomycin. Of 27 strains of intestinal bacilli, 21 were sensitive to mycerin, 7 to streptomycin, 10 to biomycin. Not a single one was penicillin sensitive. Of 94 microbial associations (isolated from the mucus of patients and consisting of grampositive and gramnegative flora), 77 were sensitive to mycerin. 2 to penicillin, 32 to streptomycin, 49 to biomycin. Of 9 penicillin-resistant strains of proteus vulgaris, 7 were sensitive to mycerin, 4 to streptomycin and 1 to biomycin. Mycerin was used in concentrations of

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USSR/Microbiology - Antibiosis and Symbiosis. Antibiotics F-2

Abs Jour : Referat Zhurn - Biol. No 16, 25 Aug 1957, 68470

0.3- 5 γ/ml. A synergistic action of mycerin with penicillin and streptomycin was established. The most clearly evident synergistic effect was noted in combinations of mycerin with biomycin.

Card 2/2

BELYAYEVA, L. A.

USSR/ Microbiology. Antibiosis and Symbiosis. F-2
Antibiotics

Abs Jour: Ref Zhur - Biol., No 6, 1958, 24128

Author : Belyaeva, L. A.
Inst : Not given
Title : Comparative Value of Determining Microbial Sensitivity to Antibiotics by Use of Serial Dilutions and With the Aid of Disks.

Orig Pub: Labor. delo, 1957, No 1, 36-37

Abstract: The method of determining the sensitivity to antibiotics of microbial associations, as well as of pure cultures of streptococci, white and aureous staphylococci, gram-positive and gram-negative bacilli isolated from patients, is simpler and more convenient if disks are used, and gives results which are almost in complete agreement with

Card 1/2

USSR/ Microbiology. Antibiosis and Symbiosis. Antibiotics F-2

Abs Jour: Ref Zhur - Biol., No 6, 1958, 24128

Abstract: the results of the method of serial dilutions. For testing microbial sensitivity by the disk method, the medium suggested by V. A. Shorin is utilized, to which must be added 1% glucose and facultatively 5% of serum or blood. The number of microorganisms must not exceed 500 million per ml of medium.

Card 2/2

~~BELYAYEVA~~ BELYAYEVA

Category: USSR/ Diseases of Farm Animals. Diseases of Undetermined Etiology. V-4

Abs Jour: Refer. Zhur-Biologiya, No 16, 1957, 72334

Author : Lazarevich P. L., Nikolaev, Mironyuk, Belyaeva
Inst : Not given
Title : The Use of Food Supplements In Enzootic Ataxia of Lambs.

Orig Pub: Tr. Dagestansk. S. Kh. In-ta, 1956, 8, 41-47

Abstract: The addition of fish fats, chalk, and bone meal to the ration of lambs with enzootic ataxia showed no healing effect. The administration of copper sulfate to lambs, with the severe form of the disease, produced no positive results. The results of some physiological and biochemical investigations are given and also the blood analysis of the ill lambs is cited.

Card : 1/1

73. **Effect of Micerin on Microorganisms**

"Investigation of the Action of Micerin in Experiments in Vitro," by M. G. Glazman and L. A. Belyayeva, Hospital imeni Bauman and Main Military Hospital imeni Burdenko, Antibiotiki, Vol 1, No 5, Sep/Oct 56, pp 23-26

Investigations were conducted to determine the effect of the new antibiotic micerin on various microorganisms, as compared with that of penicillin, streptomycin, and biomycin. Cultures of Staphylococcus aureus, Bacillus coli, Proteus vulgaris, and a mixture of microorganisms consisting of gram-positive and gram-negative flora isolated from the sputum of patients were used in the tests. The investigations established: (1) micerin is a highly effective antibiotic against gram-positive and gram-negative microorganisms; (2) its effectiveness against these microorganisms is greater than that of the other antibiotics; (3) in doses of 0.3-5.0 grams per milliliter, micerin is effective against Bacillus coli, Proteus vulgaris, and staphylococci, microorganisms resistant to penicillin; and (4) it has a synergistic action in combination with penicillin, streptomycin, and biomycin. (U)

Sum 1429

GAMALEYA, A.N., polkovnik med.sluzhby, GYURDZHIAN, A.A., kapitan med. sluzhby, kand.med.nauk., SIMONOV, P.V., kapitan med.sluzhby, knad.med.nauk, HELYAYEVA, L.A.

Effect of ioznizing radiation on penicillin activity. Voen.med. zhur. no.11:33-36 N'56 (MIRA 12:1)
(PENICILLIN)
(RADIATION--PHYSIOLOGICAL EFFECT)

BELYAYEVA, L. A.

"Comparative Evaluation of the Sensitivity of Microorganisms to Antibiotics by Serial Dilutions and the Disc Method," by L. A. Belyayeva, Laboratory of the Main Military Hospital imeni N. N. Burdenko, Laboratornoye Delo, Vol 3, No 1, Jan/Feb 57, pp 36-37

The author recommends determination of bacterial sensitivity as a guide in designating antibiotics for various pathological conditions. The purpose of the research described was to compare results obtained by the method of serial dilution and by the use of discs of filter paper impregnated with antibiotics. Staphylococcus albus and aureus, gram-positive and gram-negative bacteria, etc., all isolated from mucus, pus, urine, and perspiration of patients with various diseases, were used as experimental subjects.

Serial dilutions were set up with Khottinger's bouillon containing 132 mg% ammine nitrogen and 1% glucose, with a pH of 7.2. Penicillin, streptomycin, biomycin, and levomycetin were introduced in increasing doses. Results were read after 16 hours of culturing at 37° C in test tubes.

SUM.1374

BELYAYEVA, L. A.

In testing the disc method, the medium proposed by V. A. Shorin (1956) containing 5% serum or blood with 1% glucose was used. It is mentioned that the serum or blood may be eliminated, but that the glucose is obligatory. Petri dishes were seeded with different concentrations of bacteria, after which cleared areas attributed to effects of the antibiotics were measured.

Results of 50 comparative analyses, presented in tabular form, show that the data corresponded in the majority of cases. It is concluded that, for determining the sensitivity of bacteria to antibiotics, the disc method was as effective as the serial dilution method, more convenient, and simpler. (U)

S4M.1374

27.1220

25256 S/177/60/000/007/011/011
D264/D304

AUTHORS: Gal'chikov, V.I., Lieutenant Colonel, Slizkiy, I.S., Colonel, Tuzikov, A.V., Lieutenant Colonel, Belyayeva, L.A, and Shnyrenkova, O.V., Lieutenant Colonel (all Medical Corps)

TITLE: The "take" of foreign bodies in radiation sickness

PERIODICAL: Voyenno-meditsinskiy zhurnal, no. 7, 1960, 60-65

TEXT: The aim of the study was to determine the effects of radiation sickness on the "take" of foreign bodies (shrapnel, bullets) in the tissues. The combined action of the radiation factor and foreign body injuries was observed in rabbits. All rabbits were treated with antibiotics (penicillin) for 3 days after injury. The tests were arranged in the following series: 1) sterile and 2) staphylococcus-infected foreign bodies introduced into non-irradiated animals; 3) sterile and 4) infected foreign bodies into generally irradiated animals (1,000 r); 5) sterile foreign bodies into animals irradiated with Au^{198}; 6) gunshot wounding of rabbits gen-

Card 1/2

erally irradiated with 500-1,000 r. The results showed that the foreign bodies and resultant tissue lesions had no appreciable effect on the course of radiation sickness, except for cases where the tissue was considerably destroyed or with purulent necrotic complication of the wound process. Mild and medium radiation sickness from general irradiation did not inhibit incapsulation of the foreign bodies, whereas severe radiation sickness inhibited it greatly. Radiation sickness from radioactive substances introduced directly into the tissues and organs inhibited the plastic process. Penicillin reduced the number of postvulneral complications, but streptomycin and other antibiotics could also be used instead. The authors conclude that surgical treatment for deep-lying foreign bodies, not removed during primary surgery, in persons affected by ionizing radiation should be governed simply by the clinical symptoms of vulneration. S.S. Sokolov, N.I. Blinov, V.G. Vaynshteyn, A.S. Rovnov, B.M. Khromov, A.D. Yarushevich and I.A. Meshcheryakov are listed as Soviet scientists who have studied combinations of radiation sickness with traumatic injuries.

SUBMITTED: April, 1959

Card 2/2

L 15200-66 EWT(l)/FS(v)-3 SCTB DD/RD
ACC NR: AT6003872 SOURCE CODE: UR/2865/65/004/000/0373/0390

AUTHOR: Arsen'yeva, M. A.; Belyayeva, L. A.; Golovkina, A. V.

ORG: none

TITLE: Effect of combined exposure to acceleration, vibration, and radiation on bone marrow cell nuclei in mice

SOURCE: AN SSSR. Otdeleniye biologicheskikh nauk. Problemy kosmicheskoy biologii, v. 4, 1965, 373-390

TOPIC TAGS: mouse, radiation biologic effect, biologic acceleration effect, biologic vibration effect, cell physiology, bone marrow, x ray irradiation, mitosis

ABSTRACT: The mitotic activity of the bone marrow cells of mice exposed to the individual and combined effects of acceleration vibration and radiation was studied. The experimental parameters of the tests and their quantitative results are given in the following tables.

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L 14288-66

ACC NR: AT6003872

Table 1. Frequency of cell nucleus disruptions in the bone marrow of mice exposed to 20 G

Killed after exposure	Actions*	Cells observed: All	Cells observed: No. of disruptions	% Disruptions	n	% Chromosomal arrangement: Bridges + bridges with fragments	% Chromosomal arrangement: Fragments	% Chromosomal arrangement: % Rearrangement	n	% Adherence	Mitotic Index
1 hr	1	121	62	51,24±4,54	—	12,40±2,08	34,71±4,35	47,11±4,54	—	4,13±1,81	0,53
	2	200	103	54,00±3,52	0,4	5,50±1,60	35,00±3,43	43,50±3,50	0,6	10,50±2,16	0,25
	3	166	73	43,98±3,85	1,2	6,02±1,85	30,72±3,58	36,76±3,74	1,7	7,23±2,01	0,26
4 hr	1	709	469	60,99±1,76		24,19±1,51	29,65±1,65	53,84±1,80		7,15±0,03	2,24
	2	1561	782	50,10±1,26	5	16,72±0,91	23,07±1,07	39,78±1,24	6	10,31±0,77	1,67
	3	792	300	37,89±1,72	9	9,22±1,03	20,83±1,44	30,05±1,63	9	7,82±0,95	0,77
2 days	1	273	23	8,42±1,63		3,66±1,12	1,10±0,63	4,76±1,28		3,66±1,12	2,16
	2	629	44	6,99±1,01		1,27±0,45	3,49±0,73	4,76±0,85		2,22±0,52	1,65
	3	801	43	5,37±0,79		1,09±0,40	1,25±0,39	3,25±0,62		2,12±0,51	1,00
Control		1825	110	6,03±0,56		1,15±0,24	1,53±0,28	2,68±0,37		3,34±0,35	2,33

* 1—100 r; 2-20 G, 5 min, after 60 min, 100 hr

Card 2/8

L 14288-66
ACC NR: AT6003872

Table 2. Effect of combined exposure to centrifugation followed by irradiation on the bone marrow cells of mice

Killed after exposure	Actions*	Cells examined: All	Cells examined: No. of disruptions	Disruptions %	R	Chromosomal rearrangement %: Bridges + bridges with fragments	Chromosomal rearrangement %: Fragments	Rearrangement %	Adherence %	R	Mitotic index
1 hr.	1	955	52	5.35±0.71	—	0.81±0.30	1.13±0.35	1.93±0.44	3.42±0.58	—	2.61
	2	1201	143	11.91±0.93	3.8	1.34±0.40	0.92±0.26	2.91±0.49	8.91±0.82	4.3	2.79
	3	606	95	11.79±1.13	3.6	2.21±0.51	1.36±0.41	3.59±0.66	8.19±0.86	3.0	1.54
4 hr	1	1129	121	10.71±0.92	3.1	1.95±0.41	0.44±0.23	2.39±0.45	8.32±0.82	5.3	1.96
	2	553	83	15.01±1.51	5.1	1.62±0.54	2.19±0.62	3.80±0.81	11.21±1.41	4.7	1.82
	3	1093	107	9.79±0.80	3.4	1.19±0.33	1.19±0.33	2.38±0.46	7.41±0.79	3.8	1.47
2 days	1	713	73	10.23±1.13	2.9	1.26±0.41	0.14±0.14	1.40±0.44	8.83±1.03	3.5	2.25
	2	548	48	8.76±1.21	1.7	1.10±0.45	0.73±0.10	1.82±0.57	6.93±1.03	1.9	2.17
	3	495	55	11.11±1.41	2.5	1.62±0.56	1.41±0.51	3.03±0.77	8.03±1.22	3.2	1.77
8 G control		940	59	6.21±0.78		0.91±0.30	0.95±0.31	1.79±0.42	4.42±0.66		2.48
20 G Control		1103	83	6.99±0.73		1.34±0.33	1.84±0.33	3.17±0.51	3.75±0.55		2.02

* 1—8 G, 5 min; 2—8 G, 15 min; 3—20 G, 5 min

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L 14288-66

ACC NR: AT6003872

Table 3. Effect of combined exposure to centrifugation followed by irradiation on the bone marrow cells of mice

Killed after exposure	Actions	Cells examined: All	Cells examined: No. of disruptions	% Disruptions	n	% Chromosomal rearrangement: Bridges + bridges with fragments	% Chromosomal rearrangement: Fragments	% Rearrangement	n	% Adherence	Mitotic Index
1 hr	1	121	62	51,24±4,54		12,40±2,08	34,71±4,35	47,11±4,56		5,13±1,81	0,53
	2	319	100	31,31±2,59	3,8	6,59±1,30	18,18±2,16	24,76±2,42	4,43	6,59±1,39	0,34
	3	471	217	46,07±2,29	1,01	7,43±1,21	31,84±2,15	39,27±2,23	1,76	6,79±1,17	0,46
4 hr	1	769	469	60,99±1,76		24,19±1,54	20,65±1,63	53,84±1,80		7,15±0,93	2,24
	2	799	350	43,81±1,79	6	12,09±1,18	20,02±1,44	32,11±1,70	3,5	13,39±1,22	1,11
	3	1314	450	34,25±1,50	5,5	10,12±0,83	18,26±1,07	28,39±1,25	11,0	5,86±0,65	1,70
2 days	1	273	23	8,42±1,68		3,66±1,12	1,10±0,63	4,70±1,28		3,66±1,12	2,16
	2	548	73	13,32±1,45		2,92±0,71	1,81±0,57	4,74±0,91		8,58±1,24	1,63
	3	1204	117	9,58±0,85		3,65±0,54	3,74±0,58	7,39±0,76		2,33±0,50	1,31
Control		1833	110	6,03±0,53		1,15±0,24	1,53±0,28	2,68±0,37		3,34±0,33	2,33

* 1—100 r: 2-8 G, 15 min, after 60 min, 100 r; 3-8 G 15 min, after 4 hr, 100 r

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L 14288-66

ACC NR: AT6003872

Table 4. Frequency of cell nucleus disruptions in the bone marrow after exposure to centrifugation for 30 min. and vibration for 60 min.

Dry killed after exposure	Magnitude	Cells examined: All	Cells examined: No. of disruptions	% Disruptions	n	% Chromosomal rearrangement: Bridges	Bridges with fragments	Fragments	% Rearrangement	% Adherence	n	Mitotic index
1st	10G	503	33	6,56±1,11	—	0,99	—	1,19	2,19±0,65	4,37±0,91	—	2,41
	700cps	444	54	12,16±1,55	3,7	4,05	—	0,68	4,73±1,00	7,43±1,25	3,6	2,80
3rd	10G	800	60	6,75±0,84	—	2,36	—	0,78	3,14±0,58	5,60±0,62	1,4	2,64
	700cps	1020	120	11,76±1,00	4,9	4,12	0,49	1,18	5,69±0,73	5,98±0,74	3,8	2,83
7th	10G	781	44	5,61±0,82	—	3,44	0,38	0,69	4,72±0,76	0,89±0,33	—	2,44
	700cps	764	64	8,38±1,00	2,1	2,88	0,13	0,26	4,27±0,73	5,10±0,79	2,8	2,86
15th	10G	769	49	6,37±0,88	—	3,77	0,26	0,39	4,42±0,74	1,95±0,50	—	2,71
	700cps	428	26	6,10±1,16	—	1,17	—	1,88	3,05±0,83	3,05±0,83	—	2,84
30th	10G	505	45	8,91±1,26	2,2	2,37	0,19	0,95	3,51±0,82	5,35±1,00	2,5	2,69
	700cps	310	19	5,96±1,20	—	3,72	0,32	0,32	4,39±1,15	1,57±0,69	—	3,00
Control		1317	77	5,85±0,64	—	2,28	0,15	0,91	3,34±0,51	2,51±0,50	—	3,28

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L 14288-66

ACC NR: AT6003872

Table 5. Effect on the bone marrow cells of mice of combined exposure to centrifugation or vibration followed by x-ray irradiation after 24 hours

Dry killed after exposure	Actions*	Cells examined: All	Cells examined: No. of disruptions	% Disruptions	R	% Chromosomal rearrangement: Bridges	Bridges with fragments	% Rearrangement: Fragments	% Rearrangement	R	% Adherence	Mitotic index
3rd	1	420	90	21,43±2,00	—	5,00	3,57	11,43	20,00±1,95	—	1,43±0,55	1,30
	2	75	14	18,66±4,43	—	9,31	2,68	5,31	17,20±4,37	—	1,33±1,32	0,54
	3	182	40	21,09±3,06	—	10,45	2,10	7,14	19,78±2,95	—	2,20±1,03	0,51
7th	1	629	121	19,21±1,57	—	8,90	1,43	7,79	18,12±1,51	—	1,11±0,41	2,30
	2	471	41	8,70±1,30	5,1	2,54	0,22	1,91	4,67±0,96	7	4,03±0,90	2,10
	3	291	25	8,50±1,64	4,7	4,12	—	1,37	5,50±1,33	6	3,09±1,01	0,49
15th	1	748	78	10,43±1,12	—	6,02	0,13	2,54	8,69±1,05	—	1,74±0,48	3,00
	2	390	36	8,45±1,41	1,1	3,33	0,25	2,56	6,15±1,19	1,6	3,03±0,87	2,72
	3	367	27	7,40±1,37	1,7	1,90	—	1,09	3,00±0,80	4,3	4,40±1,07	3,02
30th	1	648	68	10,03±1,15	3,1	6,64	0,20	2,36	9,20±1,11	4,9	0,74±0,33	2,29
	2	357	37	10,36±1,61	2,6	3,92	0,58	2,00	7,34±1,38	2,8	3,03±0,94	3,01
	3	383	43	11,23±1,61	3,1	4,69	0,26	2,61	7,57±1,35	2,9	3,66±0,95	3,03
Control		1317	77	5,85±0,64		2,28	0,15	0,91	3,34±0,51		2,51±0,50	3,28

* 1—350 r; 2-10 G + 350 r; 3-700 cps + 350 r

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L 14288-66

ACC NR: AT6003872

Table 6. Effect on the bone marrow cells of mice of combined exposure to x-ray irradiation followed by centrifugation or vibration 24 hours later.

Dry killed after exposure	Action*	Cells examined: All	Cells examined: No. of disruptions	% Disruptions	n	Chromosomal rearrangement: Bridges	Bridges with fragments	Fragments	% Rearrangement	n	% Adherence	Mitotic index
3rd	1	420	90	21,43±2,00		5,00	3,57	11,43	20,00±1,95		1,43±0,58	1,30
	2	430	80	18,60±1,84	1,0	2,53	0,46	12,88	16,05±1,76	1,4	2,56±0,76	1,90
	3	397	77	19,40±1,96	0,9	3,27	—	10,32	12,60±1,66	2,8	5,60±2,00	2,15
7th	1	629	121	19,24±1,57		8,90	1,43	7,70	12,12±1,51		1,11±0,41	2,30
	2	369	49	13,28±1,76	2,4	7,59	0,54	0,54	8,67±1,40	4,3	4,61±2,04	3,25
	3	310	45	14,04±1,86	2,1	4,81	1,65	6,59	12,61±1,78	2,9	1,43±0,63	2,77
15th	1	718	78	10,43±1,12		6,02	0,13	2,54	8,69±1,06		1,74±0,48	3,60
	2	357	37	10,98±1,70		7,54	0,56	1,45	9,79±1,62		1,19±0,59	2,68
	3	343	43	12,54±1,78		7,29	0,28	1,46	9,04±1,55		3,50±0,99	3,60
30th	1	678	68	10,03±1,15	3,1	6,64	0,29	2,36	9,29±1,11	4,9	0,74±0,33	2,29
	2	327	27	8,26±1,52	1,4	7,25	—	1,22	8,26±1,52	3,1	—	2,50
	3	339	29	8,55±1,51	1,6	6,19	0,59	0,59	7,08±1,39	2,5	1,74±0,65	2,99
Control		1317	77	5,85±0,64		2,28	0,15	0,91	3,34±0,51		2,51±0,50	3,28

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* 1—350 r; 2—350 r + 10G; 3—350 r + 700 cps

L 14288-66

ACC NR: AT6003872

The changes in mitotic activity in bone marrow cell mitosis may reflect altered oxygen metabolism on the macro or cellular level or the effect of the physical factors tested on the sympathetic system and the secretion of adronalin or noradronalin. These two hormones tend to protect the organism from radiation but also depress mitotic activity. It is also possible that the physical factors themselves had a direct effect on the cellular mechanism. In general, however, it was felt that the various physiological changes occurring as a result of acceleration or vibration lead to disruptions of mitotic activity which may reflect a unique "protective" effect from radiation. Orig. art. has: 4 figures and 6 tables. [ATD PRESS: 4091-F]

SUB CODE: 06 / SUBM DATE: none / ORIG REF: 006 / OTH REF: 009

Card 8/8

L 4506-66 EWT(1)/FS(v)-3 WVH/DD

ACC NR: AP5026060 SOURCE CODE: UR/0293/65/003/005/0796/0807

AUTHOR: Arsen'yeva, M. A.; Belyayeva, L. A.; Demin, Yu. S.; Pokrovskaya, G. L.; Golovkina, A. V.; Gavrilina, L. I.

ORG: none

31
23

TITLE: The effect of some space-flight factors on the hereditary structures of mammals

SOURCE: Kosmicheskiye issledovaniya, v. 3, no. 5, 1965, 796-807

TOPIC TAGS: animal genetics, biologic mutation, radiation biologic effect, radiation injury, vibration effect, acceleration effect

ABSTRACT: The effect on certain mammalian structures (bone marrow, spleen, and testes) of vibration and acceleration is studied, as independent factors and in combination with radiation. In the first series of experiments, mice were subjected to vibration with a frequency of 35 and 75 cps (amplitude 0.4 mm) for 15 min, 1 hr, and 4 hr. Experimental results showed an increase in the frequency of chromosome adhesions and an increased frequency of chromosome rearrangements in bone-marrow cells and spleen, together with adhesion of chromosomes in the metaphase of meiosis of testes cells. In the second series of experiments, mice were subjected to acceleration of 8 g for 5 and 15 min. This factor caused an increase in the frequency of chromosome adhesions, and some increase in the number of chromosome rearrangements and chromosome fragmenta-

Card 1/2 UDC: 629.198.61.591.15

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L 4506-66

ACC NR: AP5026060

tions in the bone-marrow cells of mice. In general, it was found that vibration and acceleration cause disruptions in the nuclei of bone-marrow and spleen cells. Another group of experiments on the combined effect of vibration or acceleration and radiation on the cell nucleus showed a general decrease in the radiation effect. Either of these factors, when applied prior to irradiation with x-rays (33 rad/min) or fast neutrons (11 rad/min), decreased the radiation effect in the following manner: They decreased the frequency of chromosome aberrations in bone-marrow cells by the second day after irradiation and decreased the frequency of chromosome aberrations in germ cells after 24 hr. However, the protective effect of vibration and acceleration depends not only on when the effect was exerted (prior to or after irradiation), but also on the time interval between the influence of these factors and subsequent irradiation. Analysis of the mechanism of the combined effect of these factors is a very complex problem and requires much more investigation. Orig. art. has: 10 tables and 1 figure. [JS]

SUB CODE: LS/ SUBM DATE: 03Apr64/ ORIG REF: 007/ OTH REF: 001/ ATD PRESS: 4/30

Card 2/2

L 47293-66 EEC(k)-2/EWT(1)/FCC/FSS-2 SCTB TT/BD/RD/GW

ACC NR: AP6031663 SOURCE CODE: UR/0216/66/000/005/0625/0643

AUTHOR: Frank, G. M.; Livshits, N. N.; Arsen'yeva, M. A.; Apanasenko, Z. I.; Belyayeva, L. A.; Golovkina, A. V.; Klimovitskiy, V. Ya.; Kuznetsova, M. A.; Luk'yanova, L. D.; Meyzerov, Ye. S.

ORG: Institute of Biological Physics, AN SSSR (Institut biologicheskoy fiziki AN SSSR)

TITLE: The combined effect of spaceflight factors on some functions of the organism

SOURCE: AN SSSR. Izvestiya. Seriya biologicheskaya, no. 5, 1966, 625-643

TOPIC TAGS: central nervous system, biologic oxidation, biologic metabolism, reflex activity, brain tissue, radiation effects, ~~ionizing~~ radiation biologic effect, ionizing radiation

ABSTRACT: Results of experiments studying the combined effect of spaceflight factors (acceleration, vibration, and radiation) on some functions of the organism (brain hemodynamcis, CNS functions, and cell division of hematopoietic organs) are discussed. Tolerance of the CNS to accelerations depends significantly on changes of brain hemodynamics during accelerations. Brain blood flow in rabbits subjected to centrifugal accelerations in the head-foot direction (5 G in head region and 10 G in pelvis region) for 12 to 60 sec decreased. This reaction was insignificant during the first exposure, sharply increased during repeated exposure, and weakened after chronic exposure, thus indicating that tolerance to accelerations can be

Card 1/3 UDC: 611.8:629.195.2

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ACC NR: AP6031663

increased by training. Participation of CNS reflex mechanisms in these processes is probable. The 15-min exposure of guinea pigs to radial accelerations (8 G), centrifuged twice with a one-day interval, increased the spontaneous bioelectrical activity of extensor muscles; however, the effect was not lasting. It was lowered the day after the second centrifugation and was essentially the same as the control from the sixth day. The 15-min exposure of the animals to vibrations (70 cps, 0.4 mm amplitude), twice with a one-day interval, produced less distinct but more stable changes, with normalization more than 25 days after the first vibration exposure. Changes in myoelectric activity during spaceflight (Sputnik-4) incorporated features of both acceleration and vibration effects, appreciably exceeding them in intensity. Oxidation processes in brain tissues, judged by PO_2 and "oxygen test" results, were initially increased in intensity by the effect of vibrations (using the above parameters), and subsequently underwent phase changes, including depression of oxidation metabolism during the aftereffect period. Changes in unconditioned defense and vestibulotonic reflexes and upper nervous activity were observed later than 12 days after vibration. Inhibition of food-procuring conditioned and defensive unconditioned reflexes in the majority of animals, with pronounced parabiotic phenomena, was also found. Exposure to 8-, 10-, and 20-G accelerations and vibration (700 cps, 0.005 mm, 60 min) resulted in decreased mitotic activity of bone-marrow cells for 30 days. Disturbances of cell division involved chromosomal stickiness and increase in the number of chromosomal aberrations. Ionizing radiations and the above dynamic factors produced a similar effect on oxidation metabolism in brain tissues and cellular division in hematopoietic organs. They differed

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L 47293-66

ACC NR: AP6031663

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only in the level and dynamics of changes caused. The combined effect of irradiation and dynamic factors either did not exceed or was less than the effect of each of the indicated factors separately, a phenomenon seen as a radioprotective action of dynamic factors. The relations observed are similar to phenomena of dominance and parabiosis. Typical radiation reactions were intensified when irradiation was combined with factors having directly opposed effects. The variation and complexity of results of the combination of dynamic factors and irradiation are explained by the multiplicity of the mechanisms of the combined effect of radiation and nonradiation factors. The combined exposure to vibration and whole-body acute irradiation at a lethal dose showed that in a majority of cases the vibration effect on metabolism and CNS function was dominant at early stages, while that of irradiation prevailed at later stages. At the latest stages of exposure, the combined effect of vibration and irradiation was diverse and complicated. According to some indices, the trend of changes corresponded to the effect of one of the factors while the dynamics of the processes reflected the effect of the other one. Under the uniform action of both factors, the phenomena of partial summation of weakening of the radiation effect, and in several cases of a sharp increase of radiation effect by the opposite action of the vibration effect, were observed. Probable mechanisms of the phenomena described are considered. Orig. art. has: 13 figures.

[SW]

SUB CODE: 06/ SUBM DATE: 14Dec65/ ORIG REF: 032/ OTH REF: 008/ ATD PRESS: 5095

Card 3/3

76-32-8-31/37

AUTHORS: Mikhaylenko, I. I., Markin, D. I., Belyayeva, L. B.

TITLE: The Determination of the Saturated Vapor Pressure of Low Volatile Substances (Opredeleniye davleniya nasyshchennogo para maloletuchikh veshchestv)

PERIODICAL: Zhurnal Fizicheskoy khimii, 1958, Vol. 32, Nr 8, pp. 1916-1921 (USSR)

ABSTRACT: The most interesting type of the determinations mentioned in the title is the effusion method. Among others also Swan and Mack (Swan and Mek) (Ref 2) and Zil'berman-Granovskaya (Ref 3) employed this method. In the present case the measurements were carried out at different temperatures in an apparatus, the diagram of which is given. It consists of a glass tube with a quartz balance and a platinum foil with small holes through which the effusion takes place. The saturated vapor pressures of naphthalene, iodine, nitro-benzene, phenol and orthonitro phenol were measured. The experimental conditions, the calculation formulae and the data obtained together with their graphical representation are given for the indi-

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The Determination of the Saturated Vapor Pressure of Low Volatile Substances

virial determinations. There are 6 figures and 17 references, 5 of which are Soviet.

SUBMITTED: March 25, 1957

Card 2/2

S/076/60/034/05/33/035
B010/B003

AUTHORS: Sklyarenko, S. I., Smirnov, I. V., Belyayeva, L. B., Malysheva, Ye. A.

TITLE: A Simple Apparatus for Establishing Pressures of Preset Values up to 200 Atmospheres

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 5, pp. 1136-1137

TEXT: A simple apparatus for establishing pressures up to 200 atm in small sealed vessels is described. The device (Fig.) is a hermetically sealed steel cylinder with a screwed-on cover and thermometer. The bottom of the cylinder ends in a capillary tube which is introduced into the vessel in which the pressure is to be established. The cylinder is filled with water and put in an oven. The vapor pressure of the water presses it through the capillary tube and produces the required pressure in the vessel. If the pressing-in of the water into the vessel is to be avoided, an intermediate vessel filled with mercury (or another liquid)

A Simple Apparatus for Establishing Pressures of Preset Values up to 200 Atmospheres

S/076/60/034/05/33/038
B010/B003

can be used additionally. By means of this device a pressure of 217 atm (critical pressure) can be obtained with water heated to the critical temperature (374.15°C). The pressure to be attained can be calculated from the pressure of saturated steam at a given temperature listed in respective tables. There are 1 figure and 1 Soviet reference.

SUBMITTED: July 3, 1959

Card 2/2

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(MIRA 14:5)

(Viscosimeter)

ITENBERG, I.M., redaktor; BELYAYEVA, L.I., redaktor; GRACHIKOVA, V.I., redaktor; PEKHOVA, Z.P., redaktor; ROSTOVTSEVA, Ye.P., redaktor; BUKHANOVA, N.I., tekhnicheskiy redaktor; LIFSHITS, N.I., tekhnicheskiy redaktor; SIMANOVSKIY, A.Ya., tekhnicheskiy redaktor

[World atlas] Atlas mira. Moskva, 1955. 136 p. maps. (MLRA 8:7)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye geodezii i kartografii.
(Atlases)

BELYAYEVA, L. I.

BELYAYEVA, L. I.: "Investigation of the interaction between uranium (6) and vanadium (5) in solution, using spectrophotometric methods." Leningrad Order of Lenin State U imeni A. A. Zhdanov. Leningrad, 1956. (Dissertations for the Degree of Candidate in Chemical Science.)

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[A study by spectrophotometric methods of the interaction between uranium (6) and vanadium (5) in solution; abstract of a dissertation for the degree of candidate of the chemical sciences] Issledovanie vzaimodeistviia mezhdu uranom (6) i vanadiem (5) v rastvore spektrofotometricheskimi metodami; avtoreferat dissertatsii na soiskanie uchenoi stepeni kandidata khimicheskikh nauk. Leningrad, Leningradskii univ., 1956. 13 p. (MLRA 10:1)
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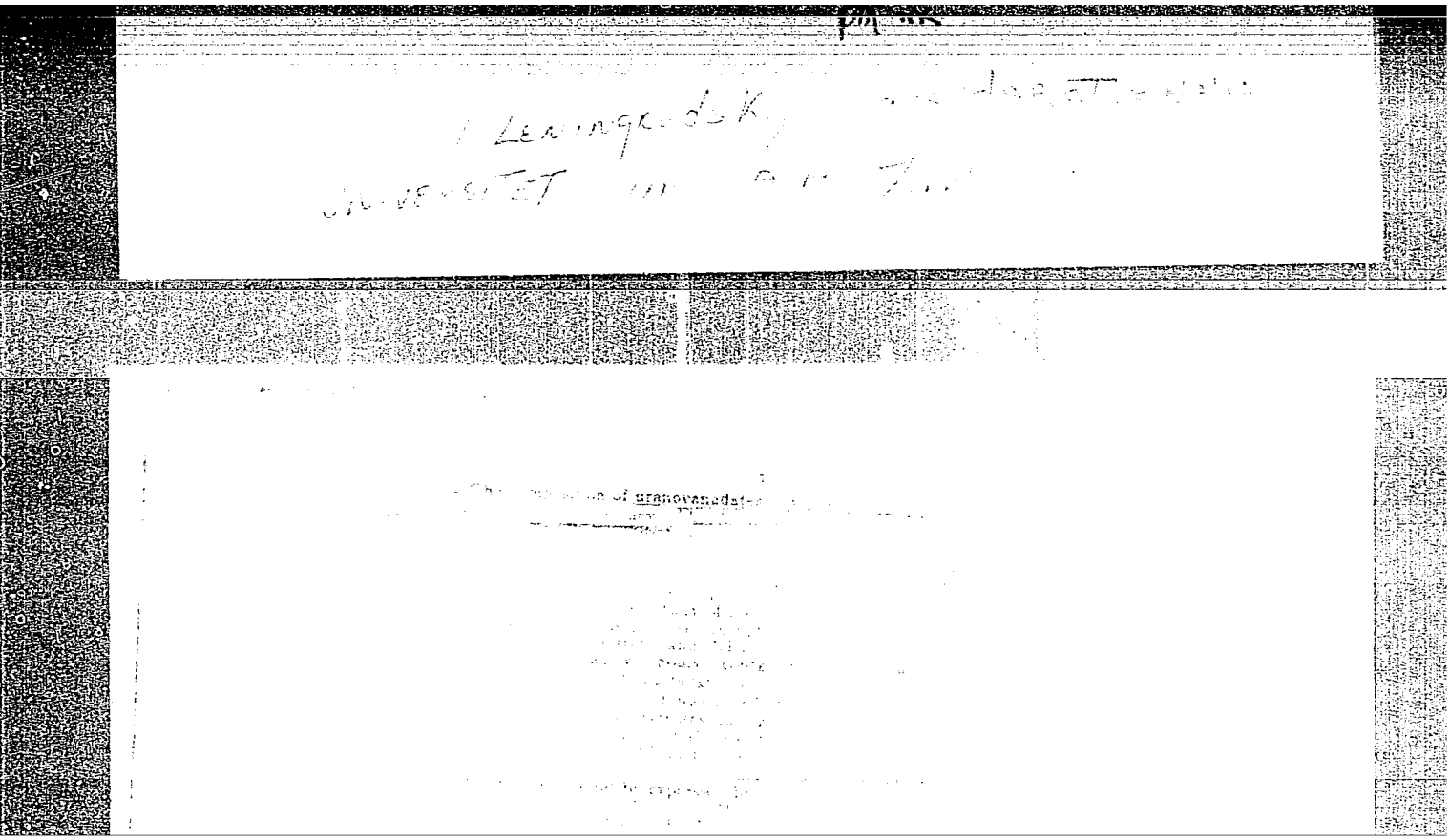
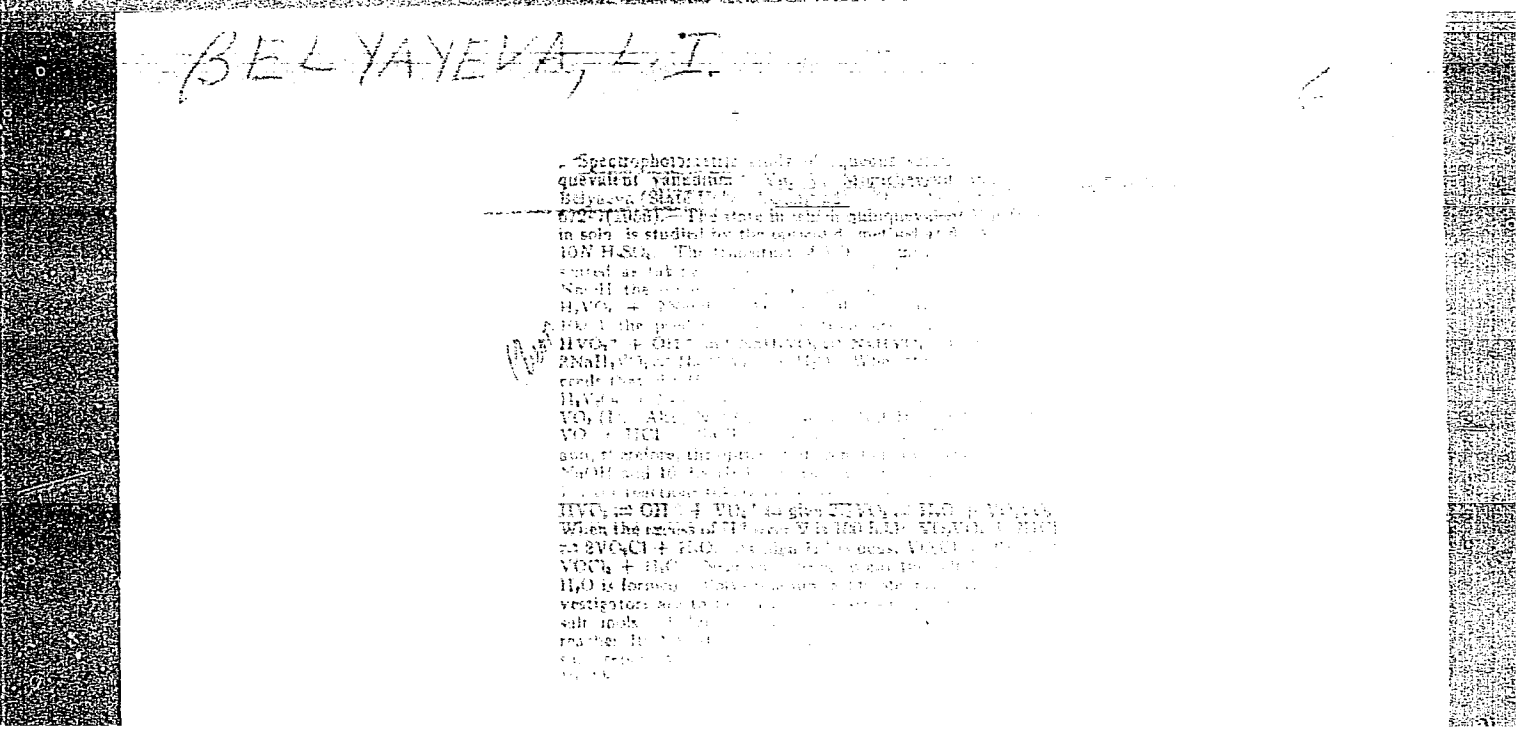


BELYAYEVA, L. I.



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BARANOV, V.I.; PAVLOTSKAYA, F.I.; FEDOSEYEV, G.A.; TYURYUKANOVA, E.B.; RODIONOVA, L.M.; BABICHEVA, Ye.V.; ZATSEPINA, L.N.; VOSTOKOVA, T.A.; Prinimali uchastiye: YEMEL'YANOV, V.V.; BELYAYEVA, L.I.; LEVKINA, N.I.; MOLCHANOVA, I.V.

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BELYAYEVA, L.N.

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(Motion-picture projectors)
(Lenses)

[redacted] BELYAYEVA, L.N.

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BELYAYEVA, L.S.

Characteristics of fractional distribution of sulfur in the component analysis of bitumens. Trudy VNIGRI no.155:97-125 '60.
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